

Amendments to the Claims

Please amend the claims as follows:

1. (Canceled).
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123. (Canceled).

124. (Currently Amended) In a computer system having a processor operatively coupled to a cursor control device and a cursor, the cursor control device further including a sensor, a method of processing cursor control data for a the cursor control device ~~having a light source and a sensor, the method~~ comprising the steps of:

programming the processor with a set of instructions;

using the processor and the instructions to perform the steps of:

determining a measured tracking value representative of motion of the cursor control device sensed by the sensor;

~~performing a confidence calculation for determining a tracking confidence value;~~

performing a projection calculation for determining a projected tracking value, the projection calculation involving a historical tracking value; ~~and~~

calculating a tracking confidence value representative of a ratio between the measured tracking value and the projected tracking value;

generating an enhanced tracking value representative of a summation of the tracking confidence value multiplied by the measured tracking value and the inverse of the tracking confidence value multiplied by the projected tracking value; and,

~~performing an enhancement calculation for determining an enhanced tracking value, the enhancement calculation involving the tracking confidence value, the projected tracking value, and a measured tracking value, the measured tracking value being representative of motion sensed by the sensor~~

moving the cursor according to the enhanced tracking value.

125. (Currently Amended) A method according to claim 124, wherein the sensor provides a pair of measured tracking values representative of ~~the sensed motion~~ of the cursor control device,

wherein the step of performing a projection calculation is ~~for~~ includes determining a pair of projected tracking values using ~~respective~~ a pair of historical tracking values, and

wherein the step of ~~performing an enhancement calculation~~ generating an enhanced tracking value is ~~for~~ includes determining a pair of enhanced tracking values; and,

~~each of the pair of enhanced tracking values being calculated using the tracking confidence value, a respective one of the pair of historical tracking values, and a respective one of the pair of measured tracking values~~

wherein the step of moving the cursor includes moving the cursor according to the pair of enhanced tracking values.

126. (Original) A method according to claim 125, wherein each of the pair of measured tracking values, projected tracking values, historical tracking values, and enhanced tracking values is representative of motion in a respective one of a pair of orthogonal directions.

127. (Currently Amended) A method according to claim 124, where the cursor control device further includes a light source and wherein the step of ~~performing a confidence calculation for determining~~ calculating a tracking confidence value involves an illumination value representative of an intensity of light sensed by the sensor[[,]] ; and,

wherein the method further comprises the step of performing an illumination calculation for determining ~~said~~ the illumination value, the illumination calculation involving a shutter value received from the sensor for a subject sensor scan and a brightness value indicative of an amount of light emitted from the light source during the subject sensor scan.

128. (Currently Amended) A method according to claim 124, wherein the ~~enhancement calculation~~ enhanced tracking value is such that if the tracking confidence value is a first value then the enhanced tracking value is equal to the measured tracking value, and if the tracking confidence value is a second value then the enhanced tracking value is equal to the projected tracking value.

129. (Currently Amended) A method according to claim 128, wherein the ~~enhancement calculation~~ enhanced tracking value is such that if the tracking confidence value is a third value then the enhanced tracking value ~~equals~~ is equal to a weighted combination of each of the measured tracking value and the projected tracking value.

130. (Original) A method according to claim 124, wherein the measured tracking value is representative of motion sensed by the sensor during a subject sensor scan, and the historical tracking value is related to at least one sensor scan prior to the subject sensor scan.

131. (Original) A method according to claim 130, wherein the historical tracking value is calculated using the enhanced tracking value for said at least one sensor scan prior to the subject sensor scan.

132. (Currently Amended) A method according to claim ~~130~~ 127, wherein the illumination value is representative of an intensity of light sensed by the sensor during the subject sensor scan.

133. (Currently Amended) A method according to claim 124, ~~further comprising the step of providing the enhanced tracking value to a client device for control of cursor motion~~ wherein the step of generating an enhanced tracking value includes the further step of applying the formula:

$$\text{dx} = (\text{Mdx}) * \alpha + (1.0 - \alpha) * \text{Pdx}$$

wherein:

dx is the enhanced tracking value;

mdx is the measured tracking value;

alpha is the tracking confidence value; and,

Pdx is the projected tracking value.

134. (Original) A method according to claim 124, further comprising the step of storing the enhanced tracking value.

135. (Currently Amended) A method according to claim 134, wherein the steps of ~~performing a confidence calculation, performing a projection calculation, and performing an enhancement calculation~~ calculating a tracking confidence value and generating an enhanced tracking value are repeated using the stored enhanced tracking value as a basis for determining the historical tracking value.

136. (Currently Amended) A method according to claim ~~132~~ 124, wherein the cursor control device further includes a light source and further comprising the step of controlling the intensity of light emitted by the light source.

137. (Canceled).

138. (Currently Amended) A method according to claim 136, wherein the step of controlling the intensity of light emitted by the light source includes controlling the intensity of light based on a shutter value signal received from the sensor.

139. (Currently Amended) A method according to claim 136, wherein the step of controlling the intensity of light emitted by the light source includes controlling the intensity of light based on a contrast signal received from the sensor.

140. (Currently Amended) A method according to claim 136, wherein the illumination value is based on ~~the~~ information received from the sensor and an intensity at which the light source is controlled during the step of controlling the intensity of light.

141. (Canceled).

142. (Canceled).

143. (Canceled).

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146. (Canceled).